



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/051,254

01/16/2002

Matthew B. Shoemake

TI-32506

7684

7590

12/27/2005

J. Dennis Moore
Texas Instruments Incorporated
P.O. Box 655474, M/S 3999
Dallas, TX 75265

EXAMINER

LEE, ANDREW CHUNG CHEUNG

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,254

Applicant(s)

SHOEMAKE, MATTHEW B.

Examiner

Andrew C. Lee

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 6, 9, 16, 10, 17, 11, 18, 12, 19, 13, 20, 14, 21, 15, 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyoshi et al. (US 6738646 B2).

Regarding claim 1, Miyoshi et al. disclose the limitation of a method for jointly controlling the data rate and power level of data transmission across a communication channel (column 29, lines 6 – 10), comprising: providing a plurality of transmit parameter pairs that each include information indicative of a data rate and information indicative of a power level (column 30, lines 29 – 35); transmitting at the data rate and power level indicated by a selected one of the transmit parameter pairs (column 30, lines 39 – 42); and sequentially selecting different ones of the transmit parameter pairs to be the selected transmit parameter pair, including determining which of the transmit parameter pairs will be the next selected transmit parameter pair based on the currently selected transmit parameter pair and a communication quality condition associated with the communication channel (Fig. 10, column 17, lines 18 – 61; column 29, lines 49 – 66; column 30, lines 1 – 8).

Regarding claim 6, Miyoshi et al. disclose the limitation of the method of claimed wherein the communication channel is a wireless communication channel (Fig.1, column 1, lines 12 – 16).

Regarding claims 9, 16 Miyoshi et al. disclose the limitation of the method and apparatus of claimed wherein the providing step includes providing an ordered list of the plurality of transmit parameter pairs (Fig. 8, column 30, lines 29 – 35).

Regarding claims 10, 17, Miyoshi et al. disclose the limitation of the method and apparatus of claimed wherein the ordered list orders the data rate for a first group of the transmit parameter pairs from lowest to highest, the data rate for each of the transmit parameter pairs of the first group paired with a common maximum power level (Fig. 8, elements BPSK (1) to 16 QAM (6); column 13, lines 18 – 24).

Regarding claims 11, 18, Miyoshi et al. disclose the limitation of the method and apparatus of claimed wherein the ordered list further orders the power level for a second group of the transmit parameter pairs from highest to lowest, the power level for each of the transmit parameter pairs of the second group paired with a common maximum data rate (Fig. 8, elements power normal (1) to power 15 dB down (6); column 13, lines 18 – 24).

Regarding claims 12, 19, Miyoshi et al. disclose the limitation of the method of claimed wherein the ordered list includes a plurality of adjacent integer indices respectively associated with the plurality of transmit parameter pairs (Fig. 8, elements 1,2,3,4,5,6; column 13, lines 18 – 24).

Regarding claims 13, 20, Miyoshi et al. disclose the limitation of the method and

apparatus of claimed wherein the sequentially selecting step includes stepping incrementally through the indices (Fig. 8, Fig. 10, column 17, lines 18 – 61).

Regarding claims 14, 21, Miyoshi et al. disclose the limitation of the method and apparatus of claimed wherein the determining step includes evaluating the communication quality condition based on the currently selected transmit parameter pair (Fig. 8, Fig. 10, column 17, lines 11 – 13; lines 18 – 61).

Regarding claims 15, 23, Miyoshi et al. disclose the limitation of an apparatus for jointly controlling the data rate and power level of data transmission across a communication channel (column 29, lines 6 – 10), comprising: a storage portion for storing a plurality of transmit parameter pairs that each include information indicative of a data rate and information indicative of a power level, said storage portion having an output for outputting a selected one of the transmit parameter pairs (column 29, lines 6 – 10; column 30, lines 29 – 35); a communication interface coupled to said storage portion output for transmitting at the data rate and power level indicated by the selected transmit parameter pair (column 12, lines 21 – 33); and a controller coupled to said storage portion for sequentially selecting different ones of the transmit parameter pairs to be the selected transmit parameter pair that is output from said storage portion, said controller including an input for receiving information indicative of a communication quality condition associated with the communication channel, and said controller operable for determining which of the transmit parameter pairs will be the next selected transmit parameter pair based on the communication quality condition and the currently selected

transmit parameter pair (column 12, lines 21 – 33; Fig. 10, column 17, lines 18 – 61; column 29, lines 49 – 66; column 30, lines 1 – 8).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 4, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyoshi et al. (US 6738646 B2) in view of Gesbert et al. (US 6760882 B1).

Regarding claim 2, Miyoshi et al. disclose the limitation of a method for jointly controlling the data rate and power level of data transmission across a communication channel (column 29, lines 6 – 10). Miyoshi et al. do not disclose expressly the method of claimed wherein the communication quality condition includes a signal to noise ratio. Gesbert et al. disclose the limitation of the method of claimed wherein the communication quality condition includes a signal to noise ratio (column 5, lines 42 – 53; column 14, lines 32 – 35, element “SNR”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Miyoshi et al. to include the method of claimed wherein the communication quality condition includes a signal to noise ratio such as that taught by Gesbert et al. in order to provide wireless communication systems and methods, and more particularly to mode selection for encoding data for transmission in a

wireless communication channel based on statistical parameters (see Gesbert et al., column 1, lines 8 – 12).

Regarding claim 3, Miyoshi et al. disclose the limitation of a method for jointly controlling the data rate and power level of data transmission across a communication channel (column 29, lines 6 – 10). Miyoshi et al. do not disclose expressly the method of claimed wherein the communication quality condition includes a signal to interference noise ratio. Gesbert et al. disclose the limitation of the method of claimed wherein the communication quality condition includes a signal to interference noise ratio (column 5, lines 42 – 53; column 14, lines 32 – 35, element "SINR"). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Miyoshi et al. to include the method of claimed wherein the communication quality condition includes a signal to interference noise ratio such as that taught by Gesbert et al. in order to provide wireless communication systems and methods, and more particularly to mode selection for encoding data for transmission in a wireless communication channel based on statistical parameters (see Gesbert et al., column 1, lines 8 – 12).

Regarding claim 4, Miyoshi et al. disclose the limitation of a method for jointly controlling the data rate and power level of data transmission across a communication channel (column 29, lines 6 – 10). Miyoshi et al. do not disclose expressly the method of claimed wherein the communication quality condition includes a packet error rate. Gesbert et al. disclose the limitation of the method of claimed wherein the communication quality condition includes a packet error rate (column 5, lines 42 – 53; column 14, lines 32 – 35, element "PER"). It would have been obvious to one of ordinary skill in the art at

the time the invention was made to modify Miyoshi et al. to include the method of claimed wherein the communication quality condition includes a packet error rate such as that taught by Gesbert et al. in order to provide wireless communication systems and methods, and more particularly to mode selection for encoding data for transmission in a wireless communication channel based on statistical parameters (see Gesbert et al., column 1, lines 8 – 12).

Regarding claim 5, Miyoshi et al. disclose the limitation of a method for jointly controlling the data rate and power level of data transmission across a communication channel (column 29, lines 6 – 10). Miyoshi et al. do not disclose expressly the method of claim 1 wherein the communication quality condition includes a function of a signal to noise ratio and a signal to interference noise ratio. Gesbert et al. disclose the limitation of the method of claim 1 wherein the communication quality condition includes a function of a signal to noise ratio and a signal to interference noise ratio (column 5, lines 42 – 53; column 14, lines 32 – 35, elements “SNR and SINR”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Miyoshi et al. to include the method of claim 1 wherein the communication quality condition includes a function of a signal to noise ratio and a signal to interference noise ratio such as that taught Gesbert et al. in order to provide wireless communication systems and methods, and more particularly to mode selection for encoding data for transmission in a wireless communication channel based on statistical parameters (see Gesbert et al., column 1, lines 8 – 12).

5. Claims 7, 8, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyoshi et al. (US 6738646 B2) and Gesbert et al. (US 6760882 B1) as applied to claims 1, 6, 9, 16, 10, 17, 11, 18, 12, 19, 13, 20, 14, 21, 15, 23, 2, 3, 4, 5 above, and further in view of Darabi et al. (US 6970681 B2).

Regarding claim 7, both Miyoshi et al. and Gesbert et al. do not disclose expressly the limitation of the method of claimed wherein the communication channel is a Bluetooth communication channel. Darabi et al. disclose the limitation of the method of claimed wherein the communication channel is a Bluetooth communication channel (column 1, lines 59 – 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify both Miyoshi et al. and Gesbert et al. to include a method of claimed wherein the communication channel is a Bluetooth communication channel such as that taught by Darabi et al. in order to provide an integrated radio receiver and/or integrated radio transmitter that support multiple wireless communication standards including, but not limited to Bluetooth and IEEE 802.11b (as suggested by Darabi et al., see column 2, lines 33 – 36).

Regarding claim 8, both Miyoshi et al. and Gesbert et al. do not disclose expressly the limitation of the method of claimed wherein the communication channel is an IEEE 802.11b communication channel. Darabi et al. disclose the limitation of the method of claimed wherein the communication channel is an IEEE 802.11b communication channel (column 2, lines 3 – 17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify both Miyoshi et al. and Gesbert et al. to include the method of claimed wherein the communication channel is an IEEE 802.11b

communication channel such as that taught by Darabi et al. in order to provide an integrated radio receiver and/or integrated radio transmitter that support multiple wireless communication standards including, but not limited to Bluetooth and IEEE 802.11b (as suggested by Darabi et al., see column 2, lines 33 – 36).

Regarding claim 22, both Miyoshi et al. and Gesbert et al. do not disclose expressly the limitation of the apparatus of claimed provided in one of a Bluetooth and an IEEE 802.11b transmitter. Darabi et al. disclose the limitation of the apparatus of claimed provided in one of a Bluetooth and an IEEE 802.11b transmitter (column 2, lines 3 – 32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify both Miyoshi et al. and Gesbert et al. to include the apparatus of claimed provided in one of a Bluetooth and an IEEE 802.11b transmitter such as that taught by Darabi et al. in order to provide an integrated radio receiver and/or integrated radio transmitter that support multiple wireless communication standards including, but not limited to Bluetooth and IEEE 802.11b (as suggested by Darabi et al., see column 2, lines 33 – 36).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ACL

Dec 19, 2005


Ajit Patel
Primary Examiner